

## REMARKS

Favorable reconsideration of this application, in light of the present amendment and in view of the following discussion, is respectfully requested.

In accordance with the foregoing, claims 1, 5 and 8 are amended and new claims 11 and 12 are added. Claims 1-12 are pending and under consideration, and claim 4 is allowed.

Applicant thanks the Examiner for the early indication of allowable subject matter with regard to claim 4.

As an initial matter, it is noted that a system is taught including a processor that cannot perform a read-modify-write operation for performing semaphore control in a single instruction. As such, a semaphore control circuit asserts a control signal in response to a read access by a processor directed to a semaphore address, and negates the control signal in response to a write access by the processor directed to the semaphore address (see page 1, line 27 to page 2, line 3). As an advantage, this configuration prevents system inconsistency caused by memory access by other processors (see page 1, lines 20-23).

Claims 1, 2, 5, 6, 8 and 9 were rejected under 35 U.S.C. § 102(b) as unpatentable over U.S. patent number 5,889,983 to Mittal. This rejection is respectfully traversed because Mittal does not teach or suggest "a semaphore control circuit which asserts a control signal in response to a read access by a processor directed to a semaphore address, and negates the control signal in response to a write access by the processor directed to the semaphore address," as in independent claims 1, 5 and 8.

Item 6 in the outstanding office action asserts that element 54b in FIG.6 of Mittal corresponds to "a semaphore control circuit which asserts a control signal in response to a read access by a processor..." However, it is respectfully submitted that element 54b in Mittal does not teach or suggest asserting a control signal in response to a read access by a processor, nor negating the control signal in response to a write access by the processor. Rather, Mittal operates in a different way than the pending independent claims because Mittal only discusses performing read-modify-write operations in a single instruction—thus in Mittal, there is no need to use a control signal to indicate whether a semaphore access is underway, in contrast to independent claims 1, 5 and 8.

Further, the amended independent claims include features of prohibiting other processors "from accessing a semaphore address when the control signal is asserted." In contrast, the system of Mittal only discusses atomic read-modify-write operations and thus does



not require or suggest a control signal that is asserted. Therefore, Mittal also does not teach or suggest this feature of independent claims 1, 5 and 8.

Accordingly, it is respectfully submitted independent claims 1, 5 and 8 and each of the claims depending therefrom patentably distinguish over Mittal.

Claims 3, 7 and 10 were rejected under 35 U.S.C. § 103(a) as unpatentable over Mittal and U.S. patent number 5,430,860 to Capps Jr. This rejection is respectfully traversed because claims 3, 7 and 10 depend on claims 1, 5 and 8, respectively, which as discussed are believed to patentably distinguish over Mittal. Moreover, Capps Jr. only discusses a lock signal used by processors performing an atomic memory access, and it is believed Capps Jr. also does not teach or suggest the features of the independent claims.

Accordingly, it is respectfully submitted the pending claims also patentably distinguish over Mittal and Capps. Jr.

In addition, claims 1, 5 and 8 are amended to include features of prohibiting other processors from accessing a semaphore address when a control signal is asserted, which is supported in the originally filed specification at least at page 1, lines 36 and 37. Further, FIG. 6 is amended to correct a minor informality. It is believed no new matter is added.

Also, new claims 11 and 12 are added to set forth the invention in a varying scope. New claims 11 and 12 include similar features as original independent claim 1, and are believed to be allowable for similar reasons as independent claim 1.



Consequently, in view of the present amendment and in light of the above discussion, this application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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